

DRAFT

Permit Evaluation Report

Fortes Auto Body
1137 Kern Ave
Sunnyvale, CA 94085

Application Number: 25640
Plant Number: 22056

Background:

Fortes Auto Body, to be located in Sunnyvale, is applying for an Authority to Construct/Permit to Operate for a spray booth. This site is expected to install a modern spray booth. There is a natural gas fired heating system to dry coatings. The business previously operated at a permitted site in Mountain View; this application is essentially for a relocation of an existing business.

This new site is within 1000 feet of one K-12 school. This permit review will therefore necessitate a Public Notice.

The site will be reviewed at a maximum limit of 500 gallons of coating and 150 gallons of a clean-up solvent that contains no ethyl benzene, though it is expected actual yearly use will be less than 400 gallons of coating and 100 gallons of clean-up solvents. The reason for the difference is to find the worst case scenario for emissions and any possible related health risks at the higher limit.

The source description is:

S-1 Spray Booth –Eagle booth with natural gas fired dryer

Emissions:

The POC emission summary for this source (S-1) is in the following table:

Coating Usage and Precursor Organic Compounds (POC) Emissions

Coating Description	Usage (Gal/y)	VOC Content (lb/gal)	POC Emission Lb/year	POC emission (tpy)
Pretreatment Coating	55	5.5	303	0.15
Primer/Primer Surfacer	73	2.1	153	0.08
Primer Sealer	72	2.1	151	0.08
Color/Single Stage Coating	140	2.8	392	0.20
Clear Coat	90	2.1	189	0.09
Multi-Color Coating	70	5.7	399	0.20
Cleanup Solvent	150	6.5	975	0.49
Total	650	-----	2562	1.28

Maximum expected firing rate of the booth dryer is 0.65E6 Btu per hour of natural gas. At 8 hrs a day, 5 days per week, 52 weeks per year that translates to 1.35E9 Btu or approximately 13,520 therms per year or 1.31E6 ft³ of natural gas per year (1 ft³ = 1031 Btu). AP-42, chapter 1.4, states the NOx emission rate is 100 lbs of NOx per 1.0E6 ft³ of natural gas used, which means NOx emissions amount to 131.0 lb per year or 0.066 tons per year.

AP-42, chapter 1.4, states the CO emission rate is 21 lbs of CO per 1.0E6 ft³ of natural gas used. Using the same firing rate as above, CO emissions amount to 27.51 lb per year or 0.014 tons per year total.

PM, SOx and POC emissions from the combustion of natural gas are negligible.

□ Maximum Daily Average Emissions:

$$\begin{aligned} \text{POC} &= (2,562 \text{ lb/yr}) / (365 \text{ d/yr}) &= 7.02 \text{ lb/d} \\ \text{NOx} &= (131.0 \text{ lb/yr}) / (365 \text{ d/yr}) &= 0.36 \text{ lb/d} \\ \text{CO} &= (27.51 \text{ lb/yr}) / (365 \text{ d/yr}) &= 0.07 \text{ lb/d} \end{aligned}$$

□ Plant Cumulative Increase:

$$\begin{aligned} \text{POC} &= 0.00 \text{ tpy (existing)} + 1.28 \text{ tpy (new)} &= 1.28 \text{ tpy} \\ \text{NOx} &= 0.00 \text{ tpy (existing)} + 0.066 \text{ tpy (new)} &= 0.066 \text{ tpy} \\ \text{CO} &= 0.00 \text{ tpy (existing)} + 0.014 \text{ tpy (new)} &= 0.014 \text{ tpy} \end{aligned}$$

Toxics and NESHAPs Emissions

The primary Toxic Air Contaminants (TACs) emitted from this coating operation consists of toluene, xylene, ethyl benzene and phosphoric acid. Also included are the target Hazardous Air Pollutants (HAPs) per National Emission Standards for Hazardous Air Pollutants (NESHAPs), subpart HHHHHH (compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), and cadmium (Cd)). A Health Risk Screen Assessment (HRSA) is carried out when the emissions of these TACs (and target HAPs) exceeds the trigger levels outlined in Regulation 2, Rule 5, Table 1. Per Regulation 2, Rule 5, Section 110, a source is not subject to the provisions of Regulation 2, Rule 5 if the increase in emissions from the project is below the trigger level listed in Table 2-5-1.

Site will be limited to a maximum of 500 gallons per year and to only use a clean-up solvent that does not contain ethyl benzene for the purpose of reducing exposure to less than half the trigger level (ethyl benzene is the primary TAC concern).

Below is a table showing the trigger levels of the TAC and target HAPs, as well as the expected emission of each compound under the proposed permit condition.

TAC and target HAP	Trigger, #/yr	Trigger, #/hourly	Max. emissions #/yr	Max. emissions, #/hr
Toluene (cleanup solvent)	12,000 #/yr	82.0#/hr	<10.0 #/yr	<1.0 #/hr
Xylene (primer & clear)	27,000 #/yr	49.0#/hr	<120.0 #/yr	<1.0 #/hr
Ethyl benzene (pretreatment & primer & topcoat)	43.0 #/yr	n/a	<18.25 #/yr	<0.01 #/hr.
Methanol (basecoat)	150,000 #/yr	62	<1.0 #/yr	<0.001 #/hr
Phosphoric acid (pretreatment)	270 #/yr	n/a	<15.0 #/yr	<0.005 #/hr
Lead	3.2 #.yr	n/a	0.0 #/yr	n/a
Chrome	.00077 #/yr	n/a	0.0 #/yr	n/a
Cadmium	15.0 #/yr	n/a	0.0 #/yr	n/a
Nickel	.43 #/yr	.013 #/hr	0.0 #/yr	n/a
Manganese	3.5 #/yr	n/a	0.0 #/yr	n/a

None of these TAC and HAPs emissions exceed the trigger level assuming worst-case scenarios (all coatings used are at the high end of TAC and HAP formulation). Thus a HRSA is not required. Also note that per California State ATCM, cadmium and hexavalent chromium are not allowed in any coating.

New Source Review:

This source does not have the potential to emit more than 10 pounds of POC per day; therefore it does not trigger Best Available Control Technology (BACT) requirements.

Since emissions for this source are less than 40 lb/day, an add-on control system is not required because it is not economically feasible per BACT guideline 161.3.1 of the BACT Handbook, dated December 16, 1991. Further examination of more recent analysis for cost effectiveness of Volatile Organic Compound (VOC) control, reinforces the BACT Handbook policies. If site controlled total VOC emissions, in theory, site could be conditioned at a higher throughput and be allowed to use non-VOC compliant coatings or coatings that have greater TAC components than currently proposed

However, as this site is expected to be in compliance with Regulation 8-45, this site will achieve BACT compliance in practice. BACT is the use of VOC compliant paints, high transfer efficiency spray-guns, proper air filtration media, and a spray-gun cleaning unit.

This level of control, in conjunction with adhering to the requirements of Regulation 8-45 and assigned an operating condition primarily to reduce ethyl benzene exposure will be considered Toxic Best Available Control Technology (TBACT) for this amount of emissions.

POC Offsets are not applicable since the facility wide emissions are less than 10 tons per year.

Statement of compliance:BAAQMD and NESHAPs:

The source (S-1 Spray Booth) is subject to and in compliance with District Regulation 8, Rule 45, and Section 301 and 302 for VOC Limits, Section 303 for Transfer Efficiency, Section 308 for Surface Prep and Solvent Loss Minimization, and Section 316 for Particulate Filtration.

This project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review (PHBK Chapter 5). The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA.

At this time, BAAQMD is not the delegated authority for the requirements of compliance with the Federal NESHAP for Paint Stripping and Miscellaneous Surface Coating Operation, Subpart HHHHHH (which includes auto body refinishing, painting and repair).

However, per interpretation of the California Health and Safety Code, Chapter 3.5, section 39658, b1, BAAQMD will verify that the site is in compliance with the NESHAP standards and will forward any materials related to the NESHAP subpart HHHHHH requirements to the EPA Region 9 office as they arrive at BAAQMD. Also BAAQMD will also notify the affected plant of the NESHAP subpart HHHHHH requirements as part of their operating conditions.

Per included application documentation and Initial Notification sent to the EPA Region 9 office, this site certifies they are in compliances with the following NESHAPs standards:

- A: Train/certify all painters on spray gun equipment, techniques, maintenance and environmental compliance,
- B: Install filters on booth that achieve 98% capture efficiency,
- C: Spray booths/stations used to refinish complete vehicles will be ventilated at negative pressure or up to 0.05 inches water gauge positive pressure for booths that have seals on doors and other openings and an automatic pressure balancing system,
- D: Spray booths/stations used to coat miscellaneous parts or products or vehicle subassemblies must have a full roof, at least three complete walls or side curtains, and is ventilated so that air is drawn into the booth,
- E: Spray-applied coatings must be applied with a HVLP spray gun or other spray equipment with equivalent technology/transfer efficiencies,

- F: Spray gun cleaning must be done so that atomized mist or spray of the cleaning solvent is not created outside a container that collects the spent solvent,
- G: Train/certify all personnel who spray apply coatings no later than 180 days after hiring or by July 7, 2008 (new sources) or by January 10, 2011 (existing sources).

Public Notification:

Sunnyvale Kindercare is located within 1000 feet from this. There are greater than 12 children in grade K and is therefore subject to the public notification requirements of Regulation 2-1-412 due to the increase in the emissions from this project.

A public notice will be sent to all parents of students of the above-mentioned school and all residents within 1000 feet of the facility. There will be a 30-day public comment period.

Conditions for S-1 (Spray Booth Operation):

Condition Number: 25137

Per California State Air Toxic Control Measure (ATCM), this site shall not use coatings that contain hexavalent chrome or cadmium.

1. Net coating usage at this facility as applied (coating + reducers + catalyst) shall not exceed 500 gallons in any consecutive twelve month period. [Basis: Cumulative Increase]
2. Net surface preparation and cleanup solvent usage (amount purchased minus amount hauled away) at this facility shall not exceed 150 gallons in any consecutive twelve month period. The surface preparation and cleanup solvent(s) shall not contain any amount of ethyl benzene. [Basis: Cumulative Increase and New Source Review]
3. Catalysts, hardeners, reducers, thinning solvents and other components shall only be added to coatings in proportions not exceeding the manufacturer's recommendations for coatings complying with Regulation 8, Rule 45. [Basis: Regulation 8 Rule 45]
4. To demonstrate compliance with the above conditions, the owner/operator shall maintain the following daily records:
 - a. Product identification number, and specialty coating category if applicable, of all coatings, catalysts, and reducers used.
 - b. Component mix ratio.
 - c. Volatile organic compound (VOC) content of coating as applied.
 - d. Quantity of coating applied.

The owner/operator shall maintain monthly records of quantity and type of all solvent used for surface prep and cleanup.

All records shall be retained on-site for two years, from the date of entry, and be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. [Basis: Cumulative Increase]

Condition Number: 24064

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements, subpart HHHHHH, for the controlling of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd) ('target Hazardous Air Pollutants') from Paint Stripping and Miscellaneous Surface Coating Operations (including motor vehicle/mobile equipment/miscellaneous surface coating operations):

1. A new site must perform Initial Notification to the delegated authority upon startup after January 9, 2008. Existing sites must perform a notification by January 10, 2011 to the delegated authority. At this time, BAAQMD is NOT the delegated authority; therefore the site must send notification to the EPA Region 9, Director of Air and Toxics Division, 75 Hawthorne St, San Francisco, CA 94105. Form HHHHHH is available at www.baaqmd.gov
2. The notification will certify that they are in compliance with the following provisions of the applicable NESHAP:
 - a. Train/certify all painters on spray gun equipment selection, spray techniques, maintenance, and environmental compliance (consult 73 FR 1738, pg.1762, section 63.11173(f)(2)(i)-(iv)).
 - b. Install/operate filter technology on all spray booths/stations/enclosures to achieve at least 98% capture efficiency.
 - c. Spray booths/stations used to refinish complete motor vehicles or mobile equipment must be fully enclosed and ventilated at negative pressure or up to 0.05 inches water gauge positive pressure for booths that have seals on all doors and other openings and an automatic pressure balancing system.
 - d. Spray booths/stations used to coat miscellaneous parts or products or vehicle subassemblies must have a full roof, at least three complete walls or side curtains, and is ventilated so that air is drawn into the booth.
 - e. Spray-applied coatings must be applied with a high volume, low-pressure (HVLP) spray gun, electrostatic application, airless or air-assisted airless spray gun, or an equivalent technology.
 - f. Paint spray gun cleaning must be done so that an atomized mist or spray of the cleaning solvent is not created outside a container that collects used gun cleaning solvent.
 - g. Train and certify all personnel who spray apply surface coatings no later than 180 days after hiring or by July 7, 2008 (new sources) or by January 10, 2011 (existing sources).
3. Maintain the following records for five year in a form suitable and readily available for expeditious review
 - a. Records to include copies of Notifications submitted to EPA.

- b. Painter training certifications.
- c. Spray booth filter efficiency documentation.
- d. Spray gun transfer efficiency.
- e. Target HAP content information in coatings, such as MSDS.
- f. Annual usage of MeCl for paint stripping, and written MeCl minimization plan if annual usage > 1 ton per year.
- g. Deviation and corrective action documentation.

4. Site may petition the Administrator for an exemption from this subpart if it can demonstrate to the satisfaction of the Administrator that the spray apply no coatings that contain compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd).

Exemption:

None

Recommendation:

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source will be located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412.6. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following source:

S-1 Spray Booth – Eagle booth with natural gas fired dryer

*By:
Duncan Campbell, Senior Air Quality Technician II
August 29, 2013*